Department of the Interior

Agency Name

Business Case Analysis for Replacement of NXXXX

Prepared By:
Agency Office
Address
Address
Date

NOTE: This template is a guide. Not everything will apply for every aircraft.

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Table of Contents

1 BUSINESS CASE ANALYSIS SUMMARY

The Agency (Agency Acronym) operates __#_ fleet _____aircraft make/model_____. This aircraft (NXXXX) was acquired for the Agency in ___year____ for approximately $_____[1]. The current blue book value is $_____ dollars. NXXXX is based in _location____ at the _____airport____. The aircraft is owned by the Department of the Interior, Aviation Management Directorate[2] (AMD).

The primary use of this aircraft is for support of give mission aircraft is primarily used for. The Agency contracts __#__ vendor ___mission purpose____ aicraft to supplement the fleet aircraft. Contract aircraft are #, make/model, and location of aircraft used in addition to the fleet to support this mission purpose.

Describe why a fleet aircraft has been included in the program, rather than contracting for the service over the years.

Describe what the aircraft is used for during the year. A table would be helpful, by month, and mission for several years, so the number of hours can be seen and charted to document the consistancy of the program over time.

Describe how well the current aircraft has supported the program it has been assigned to, including benefits of the aircraft, and capabilities it may lack, or could be enhanced through the procurement of a new/different aircraft.

Describe other fleet aircraft that the DOI currently operates throughout the US, and why these assets are unable to support this program. Also, are there other Federal assets in the area, and if so, why are they not able to support the current program requirements.

Described how the aircraft are managed, ie: All aircraft are managed to ensure a schedule which meets the specific requirements for the assigned mission. The current fleet structure provides the most cost effective mix to address each mission's requirement.

The projected service life of NXXXX is approximately XXXX years. To achieve this projected service life equipment upgrade will be required (if necessary) in ____year(s) with an estimated cost of $_____. This upgrade consists of replacing _____ (required in FY ____).

The ___-year life cycle cost for the operation and maintenance of this aircraft is projected to be about $_____.

The fleet aircraft is maintained by the DOI AMD and flown by ____ pilots. This aircraft is operated and maintained in accordance with the civil aircraft standards of FAR Part 91 and the DOI Departmental Manual to mitigate associated risks with these types of operations. The aircraft is anticipated to fly an average of ____ hours per year, which was used to calculate the FY projected cost during its useful life.

The use of DOI owned aircraft for the _____ mission in support of _____ operations, provides substantial savings when compared with accomplishing this mission using alternate means. Other means (if applicable) of performing this mission include _____. The following table describes the other alternatives considered, the advantages and disadvantages, and the risk associated with the identified alternatives. In addition to non-aviation alternatives considered, a cost analysis was performed on the current aircraft compared with other platforms and whether it is more cost effective to use one or more DOI owned and operated aircraft than to use all contractors' owned/operated aircraft.

Based on the results of the analysis it was determined that:

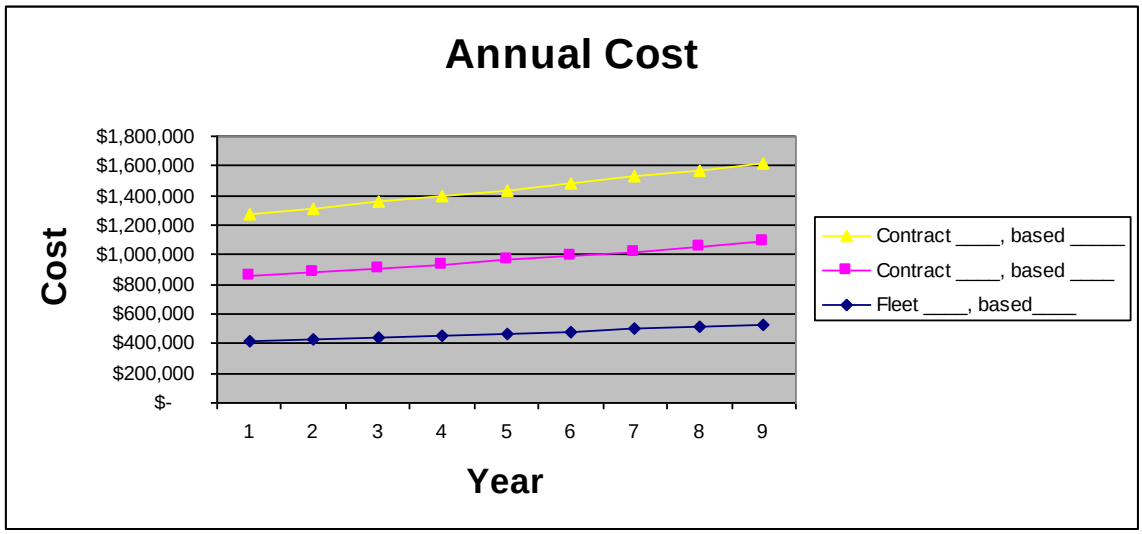
[1] See Appendices 8.2 Aircraft Procurment Documents (if available/applicable)
[2] See Appendices 8.1 Aircraft Registration (if applicable)

- The DOI owned and ____ operated _____ is (not) the most cost effective aircraft and Government ownership is(not) the most cost effective approach to accomplishing the described objectives and mission. The savings gained by using the DOI owned _____ aircraft instead of contractor-owned and operated aircraft is _____ over ___ years. See table 1.1 and graph 1.2
- It is not recommended that the entire aircraft fleet be DOI owned and BLM operated due to FTE justification and aircraft utilization. Fleet aircraft are used to provide smokejumper research and development support during periods when vendor aircraft are not on contract and provides a necessary baseline for flight standards/pilot qualifications while contributing to an environment obtaining better value from vendors.

1.1 Table: _____ Aircraft Cost with Pilot

___ Day Availability	Daily Availability cost	Hourly	Annual Cost vs. ___ day Contract	____ hour cost
Fleet _____, ___ based. (FTE included)	$	$	$	$
Contract _____ based___.	$	$	$	$
Contract _____ based ___.	$	$	$	$

1.2 Graph: Aircraft Available Days, Daily and Annual Costs



2 INTRODUCTION

The DOI owns and the ___ operates ____ fleet _____ aircraft: (#) _____, ____ based; (#) _____, _____ based; (#) _____, _____ based; etc.

The current fleet supports (agency/DOI) strategic Goals. The _____ is used _____ and is managed to ensure the aircraft is scheduled to meet specific mission requirements/objectives for each flight. Because some aspects of the _____ program have different requirements they require different aerial platforms. The current fleet provides the most effective mix of aircraft (contract and vendor/make and model) that address each program requirement. The _____ is used to _____, and is available for other government agencies use.

The _____ aircraft is designated a _____ aircraft based _____ and is maintained by the AMD while flown by _____ pilots. The aircraft is operated in accordance and maintained with the civil aircraft standards of FAR Part 91and the Departmental Manual to mitigate associated risks with this type of operation and the aircraft primarily _____. The operational experience and forecast flying hour program for the _____ aircraft is _____ hours per year per aircraft. The number of flight hours is projected to remain at the ____ hour level variable on _____.

The current _____ aircraft (do not) serve the _____ well. It is a ____ model that is (not) reliable and (not) well supported. It is also well suited to the mission payload, speed, endurance and range requirements. Any other information about the current aircraft performance and ability to support the program; alterations made; etc.

The _____ aircraft business case analysis document supports the Exhibit 300, establishes the projected 20 year budget, determines overall cost effectiveness of using the DOI-owned and operated aircraft, and estimates the cost for the required equipment upgrade in FY _____ and FY _____.

The _____ aircraft are used to support the following missions:

- _____. Include if this has been determined to be a governmental function and how it meets strategic goals.
- _____. Include if this has been determined to be a governmental function and how it meets strategic goals
- _____. Include if this has been determined to be a governmental function and how it meets strategic goals
- _____. Include if this has been determined to be a governmental function and how it meets strategic goals

2.1 Service Life of the _____

(#) factors determine the projected service life for the _____:

1 Number of aircraft in service

2 Obsolescence issues (if any) that will decrease the projected service life

3 _____ has a lower/higher than average total time on the airframe. _____ hours Total Time is significantly lower/higher than the _____ hour average.

2.1.1 Aircraft in Service

Production of the _____ by _____ started in ____ and ended in (is on-going). During this time the following number of aircraft was produced:

- Model xxxx (#)

- Model xxxx (#)
- Model xxxx (#)
- Total (#)

The _____ has (not) proven to be a good (bad) aircraft because _____ . An analysis of the in-service fleet of these aircraft shows that over __% of the ___ aircraft produced were still in service as of ____. The average age of this fleet is ____ years.

Include as much information about the aircraft, background, future service availability, etc.

This suggests that a ___ year operational life is realistic for the ____. Therefore, an aircraft built in _____ can be expected to be in service until _____.

2.1.2 Component Obsolescence

The only drawback attributable to this aircraft from the point of view of its projected service life is _____. Include any information that would be relevant to upgraded components that will/may be needed in the future.

2.1.3 Projected Service Life of the _____

Based on _____ the remaining useful life of the DOI _____ is believed to be at least ___ more years, assuming _____. This will allow use of the current/replacement aircraft until _____. For the purposes of this analysis _____ is used as the nominal replacement date for this aircraft.

3 MISSION REQUIREMENTS

The mission requirements are discussed in detail in the Requirements Document and are summarized in the following table (Table 3.1 and 3.2).

3.1 Table: Payload and Performance (complete as applicable for each mission) Example:

_____ ***mission***		
- Required Seats	#	
- Equipment rack	#	
- Total payload	# minimum	Pounds
- Endurance	#	Hours
- Maximum		
_____ ***mission***		
- Required Seats	#	
Aircraft Configuration		
Passenger Loading	(1) Air stair	
Passenger Seating	#	
- Interior furnishings	Standard	
Pilot seats	#	
Jump Door/Cargo Door	# inches wide, # inches high min.	
Miscellaneous		

Certification	Day/Night/Icing/IFR	
Avionics	Detail	
Avionics and Cockpit Displays	Detail	
Maximum Flight Crew	#	Pilots
Utilization		
_____ Mission	_____ Hours	
Total per year	_____ Hours	

3.2 Table: Aircraft Requirements

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4 COST EFFECTIVE ANALYSIS

Include how the mission is currently being completed

4.1 Alternative Aircraft

The BLM currently uses _____ owned and _____ contracted _____ aircraft for the _____ mission. There are several other aircraft that can be used for these missions.

4.1.1 Table: Aircraft and Mission Capability

These aircraft are shown in the following table

Table 4.1.1 Alternative Aircraft	Designator	Mission	Max. T.O.	Empty	Max	Max.	Range	Airframe in production
		Seating	Weight	Weight	Load	Fuel	Nautical miles	
Manufacturer & Type		Pilot +	(lb)	(lb)	(lb)	(US gals)		

4.1.2 Operating and Acquisition Cost

Acquisition and operations costs have a direct impact on the ability of the users to afford the use of the aircraft. The operation cost per hour was obtained from current fleet rate and contracts

4.1.3 Ownership Alternatives

Table 4.2..1 Cost Comparison

Cost category	**DOI**	**Contract 1**	**Contract 2**
	___ days	**___ days**	**___ days**
Fuel	$ *	$ **	$ **
Flight Support & Oxygen	$ *	$ **	$ **
Maintenance	$ *	$ **	$ **
AMD Charge * / included in the contract **	$	$ 0	$ 0
Operations Overhead See Table 2 page 16	$	$	$
Cost of Capital	$	$ 0	$ 0
Depreciation	$	$ 0	$ 0
Total	$	$	$
Total	**$**	**$**	**$**

(May need to include more than two options, including own and contract comparisons, depending on how closely ranked the aircraft types are in meeting the mission—Cost information should be comparable from one option to another, ie: all include fuel, all include pilot, FET where applicable, etc.)

4.1.4 Table: Comparison of Size and Speed of Alternate Aircraft

Item	A/C 1	A/C 2
Cabin Height (Feet)		
Cabin Width (Feet)		
Cabin Length (Feet)		
Cabin Volume (Cubic Feet)		
Door Height (Feet)		
Door Width (Feet)		
Baggage Volume Internal (Cubic Feet)		
Baggage Volume External (Cubic Feet)		
Seats - Executive		
Maximum Take-off Weight (lbs)		
Maximum Landing Weight (lbs)		
Basic Operating Weight w/crew (lbs)		
Usable Fuel (lbs)		
Payload with Full Fuel (lbs)		
Maximum Payload (lbs)		
Range - Seats Full (nm)		
Maximum Range (nm)		
Balance Field Length (feet)		
Landing Distance (Factored) (feet)		
Rate of Climb - ALL Engines (feet p/min)		
Rate of Climb - One Engine Out (feet p/min)		
Max Cruise Speed (ktas)		
Normal Cruise Speed (ktas)		
Long Range Cruise Speed (ktas)		
Service Ceiling at Maximum Weight (feet)		
One Engine Inoperative Service Ceiling at Maximum Weight (feet)		
Number of Engines		
Engine Model		
Engine Manufacturer		

4.1.5 Table: Ranking

Scoring (1 low 10 high)	A/C 1	A/C 2
- Engines		
- Cabin		
- Cargo Door		
- Pressurization		
- Minimum Speed		
- Maximum Speed		
- Total Score		

Ranking		

4.2 Operating and Acquisition Cost

Acquisition and operation costs have a direct impact on the ability of the users to afford the use of the aircraft. The operating cost per hour was obtained from the Aviation Managements Directorate database for _____. The cost of acquisition was obtained from _____. The _____ was based on _____. The following table compares the variable operating cost per hour (fuel, maintenance parts and labor plus overhaul of engines and other major components) as well as the average cost of acquisition.

4.2.1 Table: Operating and Acquisition Cost

(May need to include more than two options, including own and contract comparisons, depending on how closely ranked the aircraft are in meeting the mission—Cost information should be comparable from one option to another, ie: all include fuel, all include pilot, FET where applicable, etc.)

Aircraft	DOI _____	Alternative
Operating Cost/FH	$	$
Ranking 1(low) – 5 (High)	#	#
Acquisition Cost		
- Minimum	$	$
- Maximum	$	$
- Average	$	$
Ranking 1 – 5	#	#
Total Score	#	#
Ranking	#	#

4.3 Aircraft Ownership Alternatives

The second major area examined ownership and operation of the aircraft verses contract operations. Currently, the fleet aircraft is owned and maintained by the DOI and are operated by the ____. The alternative approach is to have a contractor provide suitably equipped aircraft as well as operate and maintain them.

There are (not) highly qualified contractors available who a) own _____ aircraft equipped for the _____ mission and b) has (not) provided these services currently or in the past. If applicable: Current vendor organizations are _____ of _____. This organization _give history of any contractors or organizations that do/may be able to provide the service.

4.3.1 Table: Aircraft Cost Comparison

	Table 2:AIRCRAFT/AVIATION OPERATIONS & MAINTENANCE CO	
	Annual Direct Operation Cost Per Flight Hour (PFH)	
T1	Fuel & Other Fluids	
	Crew (PFH)… these are travel / per diem costs… not labor costs (Flight	
T2	Safety & mission check) $____ by ____= $__ PFH	
T3	Aircraft Lease or Rental	
T4	Landing & Tie-Down Fees (if applicable)	
T5	Variable Maintenance & Spares	
	a Maintenance Labor @ $_____ per hour multiplied by ____ man-hours PFH	
	b Maintenance Parts	
	c Maintenance Contracts	
	d Engine Overhaul, etc…	
	e Reserves	
	f Total Variable Maintenance Cost PFH	
T6	Total Direct Operating Cost T1 thru T5	
T7	Flight Hours as detailed in the Performance Work Statement	
T8	**Total Direct Operating Cost (line T-6 *times* Line T-7)**	
	Annual Fixed Operating Cost	
T9	Crew… *labor costs*	
T10	Fixed Maintenance	
	a Maintenance Labor	
	b Maintenance Parts	
	c Maintenance Contracts	
T11	Aircraft Lease	
T12	Depreciation	
T13	Self Insurance	
	a Hull	
	b Liability	
	c Other	
	c1 - Casualty	
	c2- Personnel Liability	
	d Total Self-Insurance	
T14	Overhead	
T15	Cost of Capital or Finance Expense (30 Year Treasury note@___%)	
T16	Total Fixed Operating Annual Cost (lines T-9 *thru* T-15)	

The assumptions on which this analysis and the conclusions are based are as follows:

1 Fuel: The cost of fuel is based on the current fuel contract costs ($____ per gallon DOD Contract rate) and an average fuel consumption of ___ gallons per hour and is included in the current flight rate.

2 Flight support and oxygen: These costs are included in the annual charge from AMD.

3 Maintenance: Maintenance costs for the aircraft are based on the current maintenance costs charged from AMD ($____ per FH).

4 Overhead: These costs are based on __% of ___ position devoted to aviation operations (.__ FTE).

5 Cost of capital: This cost recognizes the fact that the government has a substantial amount of money tied up in these aircraft (about $_____). OMB regulations indicate that the cost of this capital must be calculated when comparing government owned aircraft with contractor owned aircraft. The current cost of capital is ____% per year (as of _____ and OMB Advisory Circular A-11, Appendix C). Vendor aircraft do not incur these costs.

6 Depreciation: This cost element recognizes the fact that aircraft depreciate over time. The formula promulgated by OMB requires depreciating the value of the aircraft ($_____) to 10% of its value over the expected service life (___ years). This cost is $_____ per year. This is not included as a cost on the contractor estimate, since the Government is not charged specifically for this cost by the contractor.

4.4 Cost Effectiveness

This analysis clearly shows that the use of the _____ is the most cost effective means of providing the required services and meet the mission requirements. Use of _____ and _____ operated aircraft saves approximately $____ (See Table 4.5.1) per year compared with _____.

4.4.1 Cost Effectiveness

Aircraft Cost with Pilot	Availability in days	Daily Availability cost	Yearly Cost	Flight Time Cost
Contract ___, ____ based.		$	$	$
Contract ____, ___ based.		$	$	$
Fleet _____, ____ based.		**$**	**$**	**$**
Contract ____, ___ based.		$	$	$
Contract ____, ___ based.		$	$	$
Contract ____, ___ based.		$	$	$
Contract ____, ____ based		$	$	$

5 COMPONENT UPGRADE ANALYSIS (IF APPLICABLE)

Include information about any component upgrades that will/may need to be done to the aircraft, and background, as applicable.

5.1 Available Component Alternatives (As Applicable)

Following is a listing of the major component manufacturers and modification centers that have active programs in this area.

- Vendor listing and experience.
- Vendor listing and experience.
- Vendor listing and experience.

Include any other alternatives considered, but ruled out, or limitations identified with the alternative chosen.

5.2 Competitor Option X

Include cost information for the alternative at various vendors, and any background or limitations.

5.3 Installation Downtime

Include information on downtime and if this will impact the mission, or how it will be mitigated.

5.4 Conclusions

The conclusion of this part of the analysis is that:

Include summary of findings related to components that should be considered in the analysis, and budget proposal.

6 TWENTY YEAR BUDGET BASELINE

The O&M cost is based on _____. That average, anticipated component upgrade, future engine overhauls inserted into a __% average inflation rate is the basis for the 20 year timeline.

Also include any other cost assumptions that were used in estimating the baseline budget.

6.1 Component Upgrade costs

Include description and estimated costs of any component upgrade that will/may be needed over the life of the aircraft.

6.2 Operating Financial Assumptions

The following operation and financial assumptions were used for the analysis:

- The program duration ____ years minimum
- Projected service life exceeds ____ years

This estimate is based on the both projected 20__ utilization and the average usage history of the aircraft.

The estimate is based on an average inflation rate of 3% recommended by AMD

6.3 Life Cycle Cost Analysis

The __ year life cycle cost analysis for _____ is shown in following table

6.3.1.1

Budget Analysis 20xx-20xx: _____

%	Inflation Rate				Other				
	Operating Cost	Maintenance Cost	O&M Cost		Overhaul /Reserve funds	Component* / Refurbishment			
Base Year	Table 2	(5 yr Average)	O&M Total		Due 20xx	Target	Due 20xx	Due 20xx	Total Cost
Py-1	YYYY		$0						$0
Py	YYYY		$0						$0
CY	Year		$0	Year		Year			$0
1	20xx		$0	20xx		20xx			$0
2	20xx		$0	20xx		20xx			$0
3	20xx		$0	20xx		20xx			$0
4	20xx		$0	20xx		20xx			$0
5	20xx		$0	20xx		20xx			$0
6	20xx		$0	20xx		20xx			$0
7	20xx		$0	20xx		20xx			$0
8	20xx		$0	20xx		20xx			$0
9	20xx		$0	20xx		20xx			$0
10	20xx		$0	20xx		20xx			$0
11	20xx		$0	20xx		20xx			$0
12	20xx		$0	20xx		20xx			$0
13	20xx		$0	20xx		20xx			$0
14	20xx		$0	20xx		20xx			$0
15	20xx		$0	20xx		20xx			$0
16	20xx		$0	20xx		20xx			$0
17	20xx		$0	20xx		20xx			$0
18	20xx		$0	20xx		20xx			$0
19	20xx		$0	20xx		20xx			$0
20	20xx		$0	20xx		20xx			$0
						20xx*			$0
						20xx**			
Total Life Cycle Cost			$0				$0	$0	$0

*Component Upgrade in _____ ($_____) and Residual Value ($_____) _____ ($_____) and Residual Value in _____ ($_____)

7 SUMMARY SPENDING PROJECT PHASES

As discussed in the preceding section, the projected service life of the _____ will extend to 20__ and no replacement is planned prior to that time. The ____-year life cycle cost is just over $____ million, including the required planning. This cost includes inflation and a required component upgrade (if applicable) in 20__. The spending summary for this project is summarized in the following table. This table is in the format required by OMB Circular A-11, Part 7 for inclusion in the agency's Exhibit 300 budgetary submission.

7.1 Table: Summary of Spending for Project Phases

Summary of Spending for Project Phases (Reported in Millions) Estimates for BY+1 and beyond for planning purposes only and do not represent budget decisions									
	PY - 1 20xx	**PY 20xx**	**CY 20xx**	**BY 20xx**	**BY+1 20xx**	**BY+2 20xx**	**BY+3 20xx**	**BY+4 and beyond**	**Total**
Planning:	-	-	-	-	-	-	-	-	-
Acquisition:									
Subtotal Planning & Acquisition	-	-	-	-	-	-	-	-	-
Operations & Maintenance									
Total									
Government FTE Costs should not be included in the amounts provided above									
Government FTE Costs									
# of FTE represented by Costs and ___% inflation rate									

8 APPENDICES

8.1 _____ Registry

FAA Registry
N-Number Inquiry Results

_____ is Assigned
Aircraft Description

Serial Number	**Type Registration**
Manufacturer Name	**Certificate Issue Date**
Model	**Status**
Type Aircraft	**Type Engine**
Pending Number Change	**Dealer**
Date Change Authorized	**Mode S Code**
MFR Year	**Fractional Owner**

City	**State**	**Zip Code**
County		
Country		

Airworthiness

Engine Manufacturer	**Classification**
Engine Model	**Category**
	A/W Date

8.2 Aircraft Procurment Documents (If Applicable)

8.3 AMD Financial Documents (If Applicable)

9 DOCUMENT ACCEPTANCE and RELEASE NOTICE

This is ___(date)____ of the **Baseline of NXXXX**.

The Exhibit 300 of NXXX is a managed document. For identification of amendments, each page contains a version number. Changes will be issued only as a complete replacement document.

PREPARED: ____DATE: ___/___/___
(For acceptance) (__________, Document Owner)

ACCEPTED: ____DATE: ___/___/___
(For release) ([**Name, title**], ABOD/WT Member)

ACCEPTED: ____DATE: ___/___/___
(For release) ([**Name, title**], AMD Technical Representative)

ACCEPTED: ____DATE: ___/___/___
(For release) ([**Name, title**], Sponsoring Agency ABOD Member)

ACCEPTED: ____DATE: ___/___/___
(For release) ([**Name, title**], ABOD Member)

ACCEPTED: ____DATE: ___/___/___
(For release) ([**Name, title**], ABOD Member)

ACCEPTED: ____DATE: ___/___/___
(For release) ([**Name, title**], ABOD Member)

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(For release) ([**Name, title**], ABOD Member)